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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: John E. Holland et al. )  
Serial No. 10/075,786 )  
Filed: February 13, 2002 )  
For: PROTECTIVE COVER )  
TC/AU.: 2831 )  
Examiner: William H. Mayo III )  
Confirmation No.: 9809 )

CERTIFICATE OF EXPRESS MAIL

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**Attention: Board of Appeals and Interferences**

Sir:

Enclosed for filing in the above case are the following documents:

1. Appeal Brief, in triplicate
2. Acknowledgment postcard

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Our Reference No: J3781-022 (03781.0024.1)

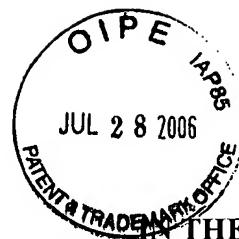
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7-31

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THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application. No.: 10/075,786  
Applicant: John E. Holland et al.  
Filed: February 13, 2002  
Title: PROTECTIVE COVER

TC/AU: 2831  
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Sir:

**APPEAL BRIEF**

This brief is in furtherance of the Notice of Appeal filed in this case on May 30, 2006. The Commissioner is hereby authorized to charge the Appeal Brief fee of \$250.00 to Deposit Account No. 09-0528. If any additional fees for the accompanying Appeal Brief are required, Appellant requests that this be considered a petition therefor. The Commissioner is hereby authorized to charge any additional fees that may be required to Deposit Account No. 09-0528.

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## **I. REAL PARTY IN INTEREST**

The real party in interest is JHRG, LLC, the assignee of record.

## **II. RELATED APPEALS AND INTERFERENCES**

The Board previously issued a Decision on Appeal, mailed March 29, 2005. There are no interferences known to Appellants, Appellants, legal representative or assignee that may be related to, directly affect, or be directly affected by, or have a bearing on the Board's decision in the pending appeal. This appeal is related to the pending appeal for Application Serial No. 09/860,423.

### **III. STATUS OF CLAIMS**

Claims 14-26 are canceled. The claims remaining in the application are 1-13 and 27-40 and are reproduced in the Claims Appendix (Appendix VIII ) attached hereto. Each of Claims 1-13 and 27-40 stands rejected.

#### **IV. STATUS OF AMENDMENTS**

There have been no amendments of claims filed subsequent to the Examiner's final rejection.

## **V. SUMMARY OF CLAIMED SUBJECT MATTER**

Independent Claim 1 is directed to a protective cover for lengths of material (Page 5, Lines 7-9) used in environments in which said lengths of material are subjected to abrasion, chemicals, or weather extremes, said protective cover comprising a sleeve (Page 5, Lines 26-28) surrounding said length of material, said sleeve having open ends (Page 5, Lines 26-28) and formed of a fabric made substantially of high performance yarns (Page 5, Lines 14-17) having a tensile modulus equal to or greater than 150 grams/denier (Page 5, Lines 14-17) and a tenacity equal to or greater than 7 grams/denier (Page 5, Lines 14-17) so that the protective cover is abrasion-resistant, cut-resistant, and tear-resistant (Page 5, Lines 21-23).

Independent Claim 27 is directed to an abrasion-resistant, cut-resistant, and tear-resistant protective cover system comprising a length of material (Page 6, Lines 23-33) that must be periodically moved or pulled across abrasive surfaces, and a protective sleeve (Page 5, Lines 26-28). The protective sleeve has open ends (Page 5, Lines 26-28) and surrounds the length of material. The protective sleeve is formed from a fabric made substantially of high performance yarns (Page 5, Lines 14-17) having a tensile modulus equal to or greater than 150 grams/denier (Page 5, Lines 14-17) and a tenacity equal to or greater than 7 grams/denier (Page 5, Lines 14-17), wherein said protective sleeve is abrasion-resistant, cut-resistant, and tear-resistant (Page 5, Lines 21-23).

Independent Claim 40 is directed to an abrasion-resistant rope (Page 7, Lines 30-31) that must be periodically moved or pulled across abrasive surfaces comprising an outer protective layer (Page 8, Lines 1-3) formed substantially from high performance yarns (Page 5, Lines 14-17) having a tensile modulus equal to or greater than 150 grams/denier (Page 5, Lines 14-17) and

a tenacity equal to or greater than 7 grams/denier (Page 5, Lines 14-17) so that the protective layer is abrasion-resistant, cut-resistant, and tear-resistant.

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Whether Claims 1-9 and 27-35 are unpatentable under 35 U.S.C. § 103(a) over Andrieu et al. (U.S. Patent No. 5,300,337) in view of Holland et al. (U.S. Patent No. 5,395,682).

Whether Claim 40 is unpatentable under 35 U.S.C. § 103(a) over Ratigan (U.S. Patent No. 5,441,790) in view of Holland (U.S. Patent No. 5,395,682).

Whether Claims 10-12 and 36-38 are unpatentable under 35 U.S.C. § 103(a) over Andrieu et al. (U.S. Patent No. 5,300,337) in view of Holland et al. (U.S. Patent No. 5,395,682), and further in view of Kite, III et al. (U.S. Patent No. 4,891,256).

Whether Claims 13 and 39 are unpatentable under 35 U.S.C. § 103(a) over Andrieu et al. (U.S. Patent No. 5,300,337) in view of Holland et al. (U.S. Patent No. 5,395,682), and further in view of Holt et al. (U.S. Patent No. 5,070,597).

## VII. ARGUMENT

Claims 1-9 and 27-35 are patentable under 35 U.S.C. § 103(a) over Andrieu et al. (U.S. Patent No. 5,300,337) in view of Holland et al. (U.S. Patent No. 5,395,682)

Appellants' appeal the Examiner's final decision, mailed November 30, 2005.

By way of summary, responsive to the Examiner's decision mailed March 17, 2003, Appellants filed a Notice of Appeal on May 2, 2003. Appellants' Brief Pursuant to 37 CFR 1.192 and an Amendment were filed on July 2, 2003. The Examiner's Answer was mailed February 24, 2004. Appellants' argument before the Board of Patent Appeals and Interferences (the Board) was heard on March 9, 2005 and the Board's Decision on Appeal was mailed March 29, 2005 (copy at Appendix X of this Appeal Brief). In that Decision, the Board affirmed the Examiner.

The Board's position was that (1) while the primary reference (Andrieu et al.) does not use a high performance yarn, the teachings of the secondary reference (Holland et al.) are sufficient to have made it obvious at the time the invention was made to a person of ordinary skill in the art to have modified the primary reference to utilize the high performance material; and, (2) Holland's teachings of a fabric that overcomes the disadvantages of polyester fabric provides sufficient motivation to have modified Andrieu et al. Appellants' position has been that (1) Andrieu et al. uses polyester, not a high performance yarn having a tensile strength greater than 150 grams/denier and a tenacity equal to or greater than 7 grams/denier; (2) there is no teaching or suggestion in Andrieu et al. (the primary reference) of any reason that would suggest a modification to utilize a yarn such as that taught by Holland et al.; and, (3) in fact, because of the teachings of Andrieu et al., there would be a substantial disincentive for one of ordinary skill in the art to substitute Appellants' significantly more expensive yarn material.

Subsequent to the Board's decision, Appellant filed a timely Request for Continued Examination on May 27, 2005 in which Appellants presented the Declaration of John E. Holland under 37 U.S.C. 1.132 containing objective evidence bearing on the patentability of Appellants' claimed invention (copy at Appendix IX of this Brief). In accord with *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), the Declaration presented for the Examiner's examination and consideration evidence of such Secondary Considerations as a long-felt but unsolved need, failure of others, unexpected results, and commercial success relevant to the invention claimed in the pending application.

**1. The Evidence Submitted by Appellants**

The Declarant, John E. Holland, is a co-inventor of the present application, as well as the President of JHRG, LLC, assignee of the entire right and interest in the pending application. Mr. Holland has extensive expertise in the textile and materials industry, spanning a period of 30 years (see Paragraphs 1-3 of the Declaration of John E. Holland).

**A. Long-Felt Need and Failure of Others**

Declarant provided specific examples of the existence of a long-felt need to solve the significant and costly problem of chafing, abrasion, and wear of materials in the maritime industry, and the failure of others and other products to solve this problem. As noted in several of the examples and Exhibits contained in the Declaration of John E. Holland, those of ordinary skill in the maritime industry have asserted that the claimed anti-chafe product provides a solution to a problem that has existed for at least decades.

In particular:

- (1) In paragraph 12 and Exhibit A of the Declaration of John E. Holland, SAIL Magazine's technical editor describes Appellants' chafing gear product as being one of the "best new products" for cruisers (sailing) that SAIL's technical consultant has seen in his years of cruising. The author notes he himself has spent years trying different solutions, none of which solved the problem.
- (2) As noted in paragraph 13 and Exhibit B of the Declaration of John E. Holland, Samson Rope Technologies, a leader in the rope and cordage industry for over 100 years, even attempted to use fire hose as an anti-chafing sleeve over critical portions of cordage and rope, but now has chosen Appellants' product over other chafing gear on the market. They did not chose Appellants' product because it was cheaper.
- (3) In paragraph 14 and Exhibit C of the Declaration of John E. Holland, Titan Maritime notes that Appellants' product solves the serious problem of wear and tear of umbilicals, rigs, hoses, etc., that other types of products, including fire hose, have failed to solve.
- (4) In Paragraph 16 and Exhibit E of the Declaration of John E. Holland, McAllister Towing of Florida notes that Appellants' product is the "best piece of chafe gear" in "30 years in the business."

## **B. Unexpected Results**

Appellants' product has also seen unexpected results and experiences in the market.

Examples include:

- (1) Evident in Paragraph 10 of the Declaration of John E. Holland, it took over two years for potential customers to appreciate the results/benefits they would see from a product that is substantially more expensive.
- (2) As Declarant describes in Paragraph 18 of the Declaration of John E. Holland, in particular, the claimed anti-chafe product formed of a fabric of SPECTRA® yarns has a slick surface characteristic. Unexpectedly, when this slick, inner surface is placed over the line to be protected, there is minimal friction and minimal heat buildup, with no or minimal degradation of the cover or the underlying protected line.

## **C. Commercial Success**

In terms of commercial success:

- (1) While gross sales of a product, such as the claimed anti-chafe product, are alone not necessarily an indication of commercial success, as Declarant notes in Paragraph 5 of the Declaration of John E. Holland, prior to 2002 JHRG had no market share in the market for similar products. More particularly, and when considered with Declarant's specific examples of commercial success, the growth of sales has been significant since introduction of the product in 2002 (see Paragraph 6 of the Declaration of John E. Holland).

(2) As explained in Paragraphs 9 and 10 of the Declaration of John E. Holland, it took over two years to convince potential customers of the value and benefits of the claimed invention.

(3) In Paragraphs 7 and 8 of the Declaration of John E. Holland, Declarant provides data on and compares the features, service lives, and costs of the claimed anti-chafe product with unsuccessful products made of CORDURA® and ballistic nylon.

(4) With respect to Paragraph 15 of the Declaration of John E. Holland, JHRG's sales (and sales growth) to the United States Government, and the United States Navy and United States Coast Guard in particular, are compelling evidence of the commercial success of this product, or any product for that matter.

The several statements made by Declarant establish that the secondary considerations that he describes therein are a result of the claimed invention itself and not the advertising thereof. Therefore, the statements confirm the nexus between the merits of the claimed invention and such considerations (see, for example, paragraphs 4, 7, 11, 12 and Exhibit A, and 15 of the Declaration of John E. Holland). *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 305 n42, 227 USPQ 657, 673-674 n42 (Fed. Cir. 1985), *cert. denied*, 475 U.S. 1017 (1986).

In view of the compelling secondary evidence provided in the Declaration and the remarks contained herein, Appellants believe that they have presented sufficient evidence, not previously available to the Examiner, to rebut the *prima facie* case of obviousness found by the Board in the previous appeal.

2. The Examiner's Treatment of Appellants' Evidence

In an Office Action mailed June 23, 2005, the Examiner summarily, and without any specificity whatsoever, found the “[Declarant’s] statement unpersuasive.” The Examiner supported his position with only the general assertion that “there exists a bona-fide *prima facie* case of obviousness.” The Examiner then essentially repeated his verbatim prior rejections of the claims and Appellants’ arguments of July 3, 2003. Appellants, thus, had no basis for understanding what, if any, evaluation the Examiner performed in reaching his conclusion.

On October 13, 2005, Appellant responded, requesting that the Examiner explain with specificity why he considered the evidence to be insufficient. Appellant also requested that the Examiner perform an evaluation and examination on the entire merits of the application in accordance with the requirements of the MPEP and existing case law.

The Examiner’s final decision was mailed on November 30, 2005. Responsive to the Examiner’s final decision mailed, Appellant filed the present Notice of Appeal on May 30, 2006 and a Supplemental Declaration of John E. Holland.

Acknowledging that the Appellant had submitted exhibits to establish long-felt need, the Examiner found the exhibits not to be persuasive. Citing *Newell Companies v. Kenney Mfg. Co.*, 864 F.2d 757, 768, 9 USPQ2d 1417, 1426 (Fed. Cir. 1988), the Examiner concludes that there is no factual evidence that the claimed invention satisfies a long-felt need since the need had been satisfied by another before the invention by the appellants. More particularly, the Examiner asserts that the Holland reference teaches using Spectra® as a protective cover for the exact purpose. Appellants respectfully disagree.

First, *Newell* involved window shades comprising a window shade material attached to telescoping, width adjustable rollers. The court noted that there were numerous patents showing

telescoping rollers that were adjustable in width to which window shade material is attached.

The patent in question (U.S. Patent No. 4,006,770) also was directed to an extensible and retractable window shade assembly having a telescoping roller assembly to which a window shade material was attached. Thus, the application in *Newell* was substantially identical to the prior art for window shades. Appellants' situation is substantially different. The Holland et al. reference is directed to a cargo curtain, not a protective sleeve for lengths of material, as claimed. Further, Holland et al. is directed to a different problem--i.e., the limited life of fabric cargo covers that are subject to inadvertent ripping and tearing, such as might be caused by forklift tines. While Holland et al. notes that other applications are possible, it does not teach or suggest a protective sleeve. Referring again to the Declaration of John E. Holland, it does not appear that the Examiner has even considered the examples (Exhibits A, B, C, and E) of the long-felt need to solve the significant and costly problem of chafing, abrasion, and wear of materials in the maritime industry, for example, and the failure of others and other products to solve these problems. Further, the Examiner erroneously concludes that there is no "failure of others to invent the claimed invention" since Holland et al. teaches a protective cover. Again, Holland et al. does not teach a protective cover for lengths of material. Furthermore, had Holland et al. solved the identified problems with protective covers for lengths of material, then those problems would not have continued to exist at the time the present application was filed. Appellants respectfully submit to the Board that the Examiner has not properly considered the evidence that rebuts the obviousness of the claimed invention.

With respect to unexpected results, the Examiner asserts that the unexpected results were established by Holland et al. Appellants again respectfully disagree. Referring again to the Declaration of John E. Holland, it does not appear that the Examiner has even considered the

examples (given in Paragraphs 10 and 18 of the Declaration of John E. Holland) (see Section 1.B above).

The Examiner has completely overlooked and not addressed Appellants' evidence of commercial success (given in Paragraphs 5, 6, and 9-11)(see items (1) to (4) listed in Section 1.C. above).

Lastly, the Supplemental Declaration of John E. Holland dated May 30, 2006 provides addition evidence relating to price comparisons between Appellants' claimed product and ballistic-grade nylon, polyester, cotton duct canvas, and fire hose covers (Paragraph 5 of the Supplemental Declaration of John E. Holland). Paragraph 6 of the Supplemental Declaration of John E. Holland provides additional evidence of commercial success.

Claim 40 is patentable under 35 U.S.C. § 103(a) over Ratigan (U.S. Patent No. 5,441,790) in view of Holland (U.S. Patent No. 5,395,682)

Appellants respectfully submit that Claim 40 is also patentable based upon the above Argument.

Claims 10-12 and 36-38 are patentable under 35 U.S.C. § 103(a) over Andrieu et al. (U.S. Patent No. 5,300,337) in view of Holland et al. (U.S. Patent No. 5,395,682), and further in view of Kite, III et al. (U.S. Patent No. 4,891,256)

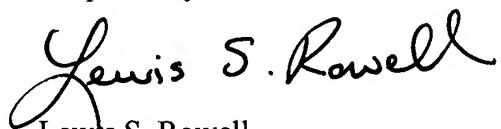
Appellants respectfully submit that Claims 10-12 and 36-38 are also patentable based upon the above Argument.

Claims 13 and 39 are npatentable under 35 U.S.C. § 103(a) over Andrieu et al. (U.S. Patent No. 5,300,337) in view of Holland et al. (U.S. Patent No. 5,395,682), and further in view of Holt et al. (U.S. Patent No. 5,070,597)

Appellants respectfully submit that Claims 13 and 39 are also patentable based upon the above Argument.

Since the Examiner's rejection of the claims based on the prior art has been shown to be inappropriate based on the presented objective evidence of Secondary Considerations, the rejection should be reversed and the case remanded to the Examiner for allowance of pending Claims 1-13 and 27-40. Such action is earnestly solicited.

Respectfully submitted,



Lewis S. Rowell  
Registration No. 45,469

Date: July 28, 2006

## VIII. CLAIMS APPENDIX

1. A protective cover for lengths of material used in environments in which said lengths of material are subjected to abrasion, chemicals, or weather extremes, said protective cover comprising a sleeve surrounding said length of material, said sleeve having open ends and formed of a fabric made substantially of high performance yarns having a tensile modulus equal to or greater than 150 grams/denier and a tenacity equal to or greater than 7 grams/denier so that the protective cover is abrasion-resistant, cut-resistant, and tear-resistant.
2. The protective cover of Claim 1 wherein said fabric is formed from at least 70 percent high performance yarns.
3. The protective cover of Claim 1 wherein said fabric has a weight of between about 5 and 8 ounces per square yard.
4. The protective cover of Claim 1 wherein said fabric is resistant to petroleum-based products.
5. The protective cover of Claim 1 wherein said high performance yarns are formed from polymers selected from the group consisting of long chain polyethylenes, high strength aramids, liquid crystal polymers, and combinations thereof.
6. The protective cover of Claim 5 wherein said high performance yarns are about 400 to 1000 denier.

7. The protective cover of Claim 6 wherein said fabric has a warp and fill density of between about 30 and 36 ends per inch.
8. The protective cover of Claim 1 wherein said sleeve is formed as an elongated sheet having opposed longitudinal edges, said opposed longitudinal edges including means releasably attaching said opposed longitudinal edges together around the length of said material.
9. The protective cover of Claim 8 wherein said means for fastening said opposed longitudinal edges comprises hook and loop material.
10. The protective cover of Claim 1 wherein said sleeve is formed as a plurality of bands, each band comprising a short length of said fabric, said bands being spaced apart along the length of said material.
11. The protective cover of Claim 10 wherein each of said bands is formed as a short length of fabric having opposed longitudinal edges, said opposed longitudinal edges including means for fastening said opposed longitudinal edges together around the length of said material.
12. The protective cover of Claim 11 wherein said means for fastening said opposed longitudinal edges comprises hook and loop material.

13. The protective cover of Claim 1 further including a hood formed of the same fabric as said sleeve and fastened to at least one end of said sleeve for protecting an exposed end of said length of material.

27. An abrasion-resistant, cut-resistant, and tear-resistant protective cover system, comprising:

- (a) a length of material that must be periodically moved or pulled across abrasive surfaces; and
- (b) a protective sleeve having open ends and surrounding said length of material and formed from a fabric made substantially of high performance yarns having a tensile modulus equal to or greater than 150 grams/denier and a tenacity equal to or greater than 7 grams/denier, wherein said protective sleeve is abrasion-resistant, cut-resistant, and tear-resistant.

28. The system of Claim 27 wherein said fabric is formed from at least 70 percent high performance yarns.

29. The system of Claim 27 wherein said fabric has a weight of between about 5 and 8 ounces per square yard.

30. The system of Claim 27 wherein said fabric is resistant to petroleum-based products.

31. The system of Claim 27 wherein said high performance yarns are formed from polymers selected from the group consisting of long chain polyethylenes, high strength aramids, liquid crystal polymers, and combinations thereof.

32. The protective cover of Claim 31 wherein said high performance yarns are about 400 to 1000 denier.

33. The system of Claim 32 wherein said fabric has a warp and fill density of between about 30 and 36 ends per inch.

34. The system of Claim 27 wherein said sleeve is formed as an elongated sheet having opposed longitudinal edges, said opposed longitudinal edges including means for releasably attaching said opposed longitudinal edges together around the length of said material.

35. The system of Claim 34 further including means for securing said open ends of the sleeve to said length of material.

36. The system of Claim 27 wherein said sleeve is formed as a plurality of bands, each band comprising a short length of said fabric, said bands being spaced apart along the length of a material to be protected.

37. The system of Claim 36 wherein each of said bands is formed as a short length of fabric having opposed longitudinal edges, said opposed longitudinal edges including means for

fastening said opposed longitudinal edges together around the length of a material to be protected.

38. The system of Claim 37 wherein said means for fastening said opposed longitudinal edges comprises hook and loop material.

39. The system of Claim 27 further including a hood formed of the same fabric as said sleeve and fastened to at least one end of said sleeve for protecting an exposed end of said length of material.

40. An abrasion-resistant rope that must be periodically moved or pulled across abrasive surfaces comprising an outer protective layer formed substantially from high performance yarns having a tensile modulus equal to or greater than 150 grams/denier and a tenacity equal to or greater than 7 grams/denier so that the protective layer is abrasion-resistant, cut-resistant, and tear-resistant.

## **IX. EVIDENCE APPENDIX**

1. Declaration of John E. Holland under 35 U.S.C 1.132, dated May 24, 2005.
2. Supplemental Declaration of John E. Holland under 35 U.S.C 1.132, dated May 30, 2006.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.: 10/075,786  
Applicant: John E. Holland et al.  
Filed: February 13, 2002  
TC/AU: 2831  
Examiner: William H. Mayo III

Docket No.: J3781-022 (24.1)  
Customer No.: 26158

Confirmation No. 9809



Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**DECLARATION OF JOHN E. HOLLAND UNDER 35 U.S.C. 1.132**

1. My name is John E. Holland and I am employed as President of JHRG, LLC ("JHRG"), assignee of the above-referenced patent application. My responsibilities include overall executive management of the company, overseeing production and sales. I am also a co-inventor of the invention claimed in the above-referenced pending U.S. patent application.

2. JHRG specializes in the production of engineered textiles with emphasis on high-performance fabrics. Our fabrics and products formed therefrom have been particularly successful commercially in the military engineered products market and in the commercial marine market. Each of the three principals (President, Vice President-Production, and Vice President-Sales) have had extensive careers within the textile industry.

3. JHRG is a small limited liability company (LLC) with 3 officers and an average of 35 employees. While one of the three officers has the title of Vice President-Sales, no personnel have sales responsibility specifically for our anti-chafe product. In addition to my duties as president, I personally perform sales functions for the entire product line, which includes the line of anti-chafe protective covers and sleeves.

4. One of the products offered by JHRG is an anti-chafe protective cover or sleeve, which is the commercial embodiment of the invention disclosed and claimed in the above-referenced patent application. Specifically, the protective covers or sleeves are formed of high performance yarns having a tensile modulus equal to or greater than 150 grams/denier and a tenacity of equal to or greater than 7 grams/denier. These anti-chafe protective covers are for use on electrical cables, hoses, ropes, and the like, and are particularly useful in environments in which the cables, etc. are subjected to abrasion, chemical exposure, saltwater, or extreme weather conditions.

5. JHRG first introduced the anti-chafe protective covers and sleeves in 2002.

6. Gross sales attributable to the anti-chafe protective covers and sleeves have been over \$380,000 since 2002.

While we understand that gross sales alone do not necessarily provide a complete picture of the success of our anti-chafe product, prior to Year 2002, JHRG was selling no protective covers for lengths of material such as ropes, hoses, cables, etc. in this relatively small market for similar products.

7. Prior to introduction of the anti-chafe cover, as claimed and described in the pending patent application, other protective sleeves and/or covers were being offered in the market for similar applications. For example, protective covers for the same environments, made of 1000 denier CORDURA® (nylon polymer) and similarly sized ballistic-grade nylon have been marketed for similar applications. CORDURA® fabric typically sells for about \$6.50 per linear yard (60 inches wide) and ballistic-grade nylon typically sells for about \$15.00 per linear yard (60 inches wide), depending upon the denier of the yarn used to form the fabric. In comparison, the SPECTRA® fabric used in our anti-chafe product sells for about \$60.00 per

yard. When used to construct the claimed protective covers, our anti-chafe covers sell for about \$180.00 per yard.

8. In terms of performance and service life, experience to date has shown that the anti-chafe covers and sleeves made from SPECTRA® fabric substantially and consistently outperform and outlast similar products made from CORDURA® or ballistic nylon. With respect to the degree of protection provided to the cables covered by CORDURA®, ballistic nylon, and the SPECTRA anti-chafe product, some specific examples are described below.

9. The anti-chafe covers have not been widely advertised. For the years 2002 – 2005, JHRG has spent less than \$50,000 promoting the anti-chafe covers and sleeves through trade shows, sales calls, and direct mail advertising. JHRG has not expended any money on print, radio or television advertising. Customers typically learn of the anti-chafe covers from “word-of-mouth” advertising.

10. Because of the substantial differences in cost, it took over two years (2002 and 2003) to convince potential customers that the anti-chafe protective covers and sleeves were worth the expenditure. Although the problem of chafing (wear and tear) in the transportation industry has been a long-standing concern and source of loss, it was simply not apparent, at first, to customers that this high-performance, high cost replacement product would better protect the cables, hoses, and ropes, tangibly save them from substantial replacement costs, prevent potential losses of their vessels and/or possible loss of life or serious injury.

11. Despite our limited sales and marketing activities, the anti-chafe sleeves and covers, as described and claimed in the pending patent application, have seen tremendous success in those industries that rely upon expensive lengths of rope, cordage, hoses, and cables, despite the higher price of our product as compared to other products being offered.

12. Included as Exhibit A is an excerpt from the January 2003 edition of nationally acclaimed SAIL Magazine, a trade magazine for sailing and maritime enthusiasts. As a tribute to SAIL's former technical editor, Freeman K. Pittman, the magazine conducts an annual search for products that embody innovation, exceptional quality, or both in the area of products for the nautical enthusiast. Technical consultants narrow down the search to those products worthy of being designated as the Freeman K. Pittman Editors' Choice selections. In the January 2003 edition, JHRG's protective sleeves, that are the subject of the instant patent application and the invention claimed therein, were one of the best new products chosen. As the excerpt notes, the product "...ain't cheap, but it sure works." Of note is that the technical consultant, the author of the excerpt, notes that he has spent time over the years using different wrappings (chafing gear) to protect his dock lines, none of which have solved the problem of chafing.

13. Included as Exhibit B is a copy of a press release from Samson Rope Technologies dated January 23, 2003 announcing that they have been named as the exclusive distributor of JHRG's anti-chafe products. Since 2003, Samson has been a major customer of these products.

As described in the excerpt of Exhibit B, and of particular significance to the commercial success of the claimed protective sleeve, Samson Rope Technologies has been recognized in the rope and cordage industry for over 100 years (since 1878) as a leader in developing and manufacturing braided ropes. Samson has been a leader in exploring new fiber and rope technologies and constructions to meet the demands of the marine and recreational boating industries, in particular. Prior to the introduction of our anti-chafe covers and sleeves, Samson purchased used fire hose to form anti-chafing gear over critical portions of its cordage and rope products. Interestingly, anti-chafing gear is needed to protect ropes made from nylon,

polyester, and polypropylene. Polyester is the material that was used to form the protective cover described in U.S. Patent No. 5,300,337 to Andrieu, the primary reference cited by the examiner in the pending application. While used fire hose may be purchased very cheaply, Samson now purchases our product at a significantly higher price (~ \$60.00 per linear foot for our anti-chafe covers and sleeves versus \$1.00 per linear foot for used fire hose).

14. Included as Exhibit C is a letter dated September 17, 2002 from Titan Maritime, LLC. ("Titan") Titan is an internationally-renowned salvage and wreck recovery company that operates in extremely remote, harsh, and difficult environments. As indicated in the letter, Mr. Gage Parrot of Titan notes that Titan is faced with the serious problems of wear and tear in their daily operations, resulting in frequent umbilical, rig, hose, and line replacement. While Titan has tried other types of anti-chafe products, also including fire hose, these products have failed to provide the required degree of protection. Again, the claimed protective sleeves are "not inexpensive", however, they have proven "cost effective and superior."

15. Included as Exhibit D is a letter dated December 18, 2003 from Mr. Brad Gunn, Captain of the Schooner Downeast Rover. The Downeast Rover is a 55 foot commercial charter schooner certified for 29 passengers. As evidenced in the letter, the high-strength, high-performance material was in service during extreme hurricane conditions to protect synthetic nylon piling lines, yet experienced no visible wear.

16. Exhibits E and F provide additional evidence of the commercial success of the claimed anti-chafe covers by commercial enterprises. Exhibit E is illustrative of the recognition that the product has gained by experienced/expert users in the industry over other attempted anti-chafe constructions. As noted in Exhibit E, Mr. Mike Ring, VP/General Manager of McAllister

Towing of Florida states that the product is "...the best piece of chafe gear I've seen in 30 years in the business."

17. In addition to the exemplary sales described above, JHRG has also sold, and continues to sell, in increased quantities, the claimed protective covers to the United States Government. More specifically, the United States Navy and United States Coast Guard, with centuries of cumulative experience, have recognized the success of JHRG's protective covers and sleeves over prior anti-chafe products for use in the defense industry. Specifically, JHRG has sold the product for use on the following United States vessels:

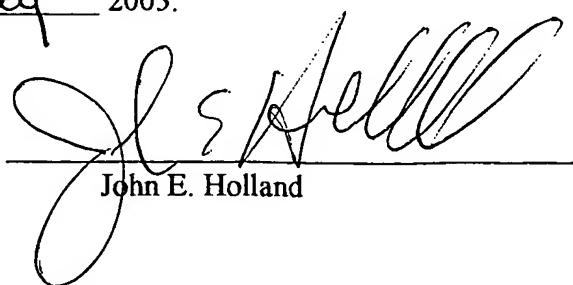
USCGC Yellowfin	USCGC Cochito	USCGC Harriet Lane
USCGC Kennebec	USCGC Tarpon	USN SBT22
USS Cape St. George	USS Donald Cook	USS Gonzalez
USS Ramage	USS Ross	USNS Comfort
USNS John Lenthall	USNS Walter S. Diehl	USS Benfold
USS Blackhawk	USS Doyle	USS Harry Truman
USS Hurricane	USS Mobile Bay	USS Salvor
USS Stout	USS Tortuga	USCGC Hickory

As those skilled in the art and knowledgeable in the industry will attest, procurement by the United States Government is not based on advertising or marketing; rather, procurement is based on bona fide need coupled with evaluation of a product against existing products designed for the same purpose. For example, we understand that the USCGC Hickory that is stationed in Alaska began using our anti-chafe product following a tidal surge that chafed a stern line, resulting in failure of the line and more than \$3,000,000 damage to the pier/dock. The rise and fall of the tide in that location is more than 30 feet, which makes chafing of lines a significant issue. As evidenced from the list above, the United States Navy has accepted and purchased this product for use on, among other vessels, its destroyers and cruisers, because our anti-chafe product outperforms all other products on the market for similar purposes.

18. Another problem in the commercial maritime industry with previous anti-chafe devices has been the adverse interaction between materials. For example, in a commercial application, particularly when mooring/docking line movement is more than minimal, a great deal of friction is created between the mooring lines and any material with which the lines are in contact (such as covers or sleeves). This friction is great enough that protective coverings previously known, made of polyester and nylon, will melt or burn. This was particularly evident during the last hurricane season of 2004. JHRG's anti-chafe protective cover, however, showed no signs of abrasion, burn, or melt. When SPECTRA® yarn is woven into the protective sleeve of our claimed invention, the inner surface (against the protected line) of the fabric is relatively slick. Unexpectedly, when this slick surface characteristic is combined with the high strength of the fabric itself, there is minimal friction and minimal heat build up. As a result, the fabric is not damaged due to wear under these extreme conditions.

I hereby declare that all statements made herein of my own knowledge are true and that any statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

This is the 24<sup>th</sup> day of May 2005.



John E. Holland



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Samson Rope Technologies and JHRG, Inc. Jointly Develop Innovative New High-Performance Chafe Gear

Date:

Thursday, January 23, 2003

Title:

Samson Rope Technologies and JHRG, Inc. Jointly Develop Innovative New High-Performance Chafe Gear

Description:

Samson Rope Technologies named as exclusive distributor of high-strength Chafe Gear from JHRG, Inc. Breakthrough technology leads to innovative chafe gear material

Ferndale, WA (January 23, 2003) – JHRG, Inc. a leader in the fabrication of HMPE sewn products, has teamed with Samson Rope Technologies, the leader in high performance rope, in the design, development and marketing of an exciting offering of chafe gear products for a wide range of industries. This new product line made of patented materials offers significant advantages over other chafe gear materials currently on the market in terms of extending the durability of high-performance ropes, in-field installation and reduced weight.

"Samson's mission is to provide its customers with high performance rope and cordage products to satisfy their unique applications. This superior line of chafe gear is the perfect compliment to our high performance product line," said Bob Ihlenfeldt, President of Samson.

"We are thrilled to be working with Samson Rope; in our effort to expand the availability of our patented chafe gear material, we sought out the most knowledgeable source for these applications and that is Samson," said Dan Nathan, VP-Sales for JHRG, Inc. "Our own experience has proven that this chafe gear is far superior to the alternatives currently on the market. Working with Samson, we have been able to improve the design to be more suitable to their customer's applications in the field. To date, we have placed the product in a wide range of demanding applications and it has exceeded all expectations."

To find out more about this exciting new product, contact Samson Rope Technologies at 1-800-227-7673. About Samson Rope Technologies For well over one hundred years, Samson has been recognized as the leader in developing and manufacturing braided ropes. Originally founded by J.P. Tolman in 1878,

Samson Cordage Works was incorporated in Massachusetts in 1888. The name was derived from the Company's trademark of Samson slaying the lion, and is currently the oldest active registered trademark in the United States. Today, Samson engineers are using the same nylon, polyester and polypropylene fibers together with newer developments in fiber technology like PBO®, HMPE (high molecular weight polyethylene, such as Dyneema®) and Technora® to produce ropes with characteristics specifically designed to enhance performance. Samson engineers continue to explore new fiber and rope construction technologies to meet the demands of the marine industry and recreational boaters alike. Samson Rope Technologies is a wholly-owned subsidiary of The AMC Group.

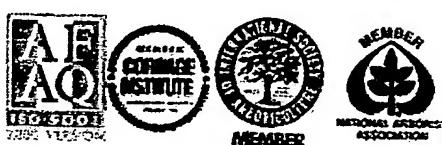
**About JHRG, Inc.** JHRG, Inc. specializes in the production of engineered textiles with emphasis on high-performance fabrics and is located in Spring Hope, NC. Operating partners include John Holland, President, Connie Holland Vice President/Production, and Dan Nathan (Vice President/Sales. All partners have spent their careers within the textile industry, focused on the development and manufacture of cut-and-sew and knitted finished goods as military engineered products and industrial personal protective equipment (PPE) - manufacturing/marketing history includes anti-G suits, anti-exposure suits, B52 drag parachutes, nitric acid rocket-fuel handlers gloves, and many other technical textiles for "challenging" work environments. JHRG LLC has spent 6 years and several million dollars of private R&D investment funding to develop, patent and produce Supreme Protector fabrics, regarded as the strongest commercial woven textiles on the planet.

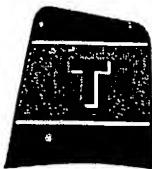
**Questions?**

**Call us at 1-800-227-7673 or E-Mail [custserv@samsonrope.com](mailto:custserv@samsonrope.com)**

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**Website designed by [Blu Sky Web Solutions](#)**





# TITAN

MARITIME, LLC

*Mailing Address.* P.O. Box 350465, Ft. Lauderdale, Florida 33335  
*Street Address:* 410 S.W. 4<sup>th</sup> Terrace, Dania, Florida 33004  
*Telephone:* (954) 929-5200 • *Facsimile:* (954) 929-0102  
*e-mail:* titan@titansalvage.com *http://www.titansalvage.com*

September 17, 2002

JHRG LLC  
Mr. Dan Nathan  
303 South Pine Street  
Spring Hope, NC 27882

Dear Dan,

I am writing to you to express our 100% satisfaction in your anti chafe products. Titan Maritime, LLC is an international salvage and wreck removal company that operates in some extremely harsh and difficult environments. Because we work in such environments and often in remote locations, Titan preserves a strict system of quality control and preventative maintenance programs.

One of our more serious problems is wear and tear of umbilicals, burning rigs, hydraulic lines, etc. during diver wreck penetration operations. Currently we are working a project to remove oil from the 468 foot cargo ship S.S. "Jacob Luckenbach", which sank in 178' of water, 17 miles off the coast of San Francisco over 50 years ago. The growth on the Luckebach is astronomical and subsequently, we were experiencing heavy chafe on both diver umbilicals and hydraulic pump and tooling hoses. Your anti chafe gear has paid for itself ten times over on this project. Prior to its installation, we were seeing significant chafe on all support hoses and umbilicals after one to two weeks of operating. I have yet to replace one length of your chafe gear since installation over one month ago. The only negative commentary from the field was the potential for the Velcro to fail. It has not failed as of yet but we do see it as a potential weakness in underwater applications. I understand you are already addressing this issue and we look forward to the results.

We have tried several different types of chafe products in the past. Everything from the purpose designed to fire hose. Nothing compares to the integrity of your product and we will be ordering lengths for all of our diver umbilicals, hydraulic hoses and potentially for up to 6" fuel oil transfer hoses. Your system is not inexpensive however it has proven itself cost effective and superior.

I would also like to thank you for the personal attention you have given our company in terms of both delivery and issuing of part numbers for each of the different diameters of chafe we have purchased thus far. Service as such these days is hard to find and to us, it is very much appreciated.

Sincerely,

Gage Parrot  
Asset Manger, Titan Maritime, LLC – USA

*Europe*

New Road, Newhaven, East Sussex, BN9 0HE  
Tel: ++44 (0) 1273 515555 • Fax: ++44 (0) 1273 515456

*South America*

Rua Gen. Mena Barreto 708, Sao Paulo, Brasil  
Tel: ++55 113887 9217 • Fax: ++55 113887 2637

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.: 10/075,786  
Applicant: John E. Holland et al.  
Filed: February 13, 2002  
TC/AU: 2831  
Examiner: William H. Mayo III

Confirmation No. 9809

Docket No.: J3781-022 (24.1)  
Customer No.: 26158

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**SUPPLEMENTAL DECLARATION OF JOHN E. HOLLAND UNDER 35 U.S.C. 1.132**

1. My name is John E. Holland and I am employed as President of JHRG, LLC ("JHRG"), assignee of the above-referenced patent application. My responsibilities include overall executive management of the company, overseeing production and sales. I am also a co-inventor of the invention claimed in the above-referenced pending U.S. patent application.
2. JHRG specializes in the production of engineered textiles with emphasis on high-performance fabrics. Our fabrics and products formed therefrom have been particularly successful commercially in the military engineered products market and in the commercial marine market. Each of the three principals (President, Vice President-Production, and Vice President-Sales) have had extensive careers within the textile industry.
3. JHRG is a small limited liability company (LLC) with 3 officers and an average of 35 employees. While one of the three officers has the title of Vice President-Sales, no personnel have sales responsibility specifically for our anti-chafe product. In addition to my

duties as president, I personally perform sales functions for the entire product line, which includes the line of anti-chafe protective covers and sleeves.

4. One of the products offered by JHRG is an anti-chafe protective cover or sleeve, which is the commercial embodiment of the invention disclosed and claimed in the above-referenced patent application. Specifically, the protective covers or sleeves are formed of high performance yarns having a tensile modulus equal to or greater than 150 grams/denier and a tenacity of equal to or greater than 7 grams/denier. These anti-chafe protective covers are for use on electrical cables, hoses, ropes, and the like, and are particularly useful in environments in which the cables, etc. are subjected to abrasion, chemical exposure, saltwater, or extreme weather conditions.

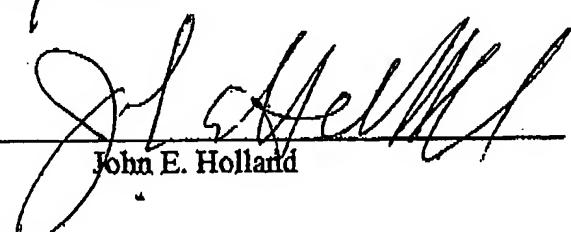
5. Prior to introduction of the anti-chafe cover, as claimed and described in the pending patent application, other protective sleeves and/or covers were being offered in the market for similar applications. As noted in my previous Declaration, protective covers for the same environments made of 1000 denier CORDURA® (nylon polymer) and similarly sized ballistic-grade nylon have been marketed for similar applications. By way of comparison, in a recent order our four foot long sleeve sold for \$104.00 (\$26 per foot). Aside from special orders, our sleeves, depending upon the rope diameter to be protected, are wholesale prices range from about \$15.50 per foot to about \$26.50 per foot. Based on the catalog of one retailer, covers formed from ballistic-grade nylon sell for between about \$3.75 per foot and \$5.50 per foot. Abrasion-resistant polyester covers sold by another retailer sell for around \$0.45 per foot. Triple-layered cotton duck canvas covers are offered at between about \$1.00 and \$1.32 per foot. Used fire hose, which has also been used in similar applications, sells for about \$5 per foot,

depending on the dimensions of the hose. Despite such wide differences in price, JHRG's covers continue to sell based on degree of protection offered, their durability, and their light weight.

6. In addition to more conventional uses in protecting mooring lines and hoses, our covers are also now used to protect the umbilical cords used by divers. Because our covers are two to ten times lighter than conventional materials, they have been found ideal for use on umbilical cords up to 200 feet long. Further, because the surfaces of our covers formed from SPECTRA® are slick, the covers slide with movement of the umbilical cords, thus not hampering movement of the divers.

I hereby declare that all statements made herein of my own knowledge are true and that any statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

This is the 30<sup>th</sup> day of May 2006.

  
John E. Holland

## **X. RELATED PROCEEDINGS APPENDIX**

1. Decision on Appeal, dated March 29, 2005.

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

## UNITED STATES PATENT AND TRADEMARK OFFICE

### BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte JOHN E. HOLLAND  
and  
CONNIE W. HOLLAND

Appeal No. 2005-0288  
Application No. 10/075,786

HEARD: March 9, 2005

Before McQUADE, NASE, and BAHR, Administrative Patent Judges.  
NASE, Administrative Patent Judge.

#### DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection (mailed March 17, 2003) of claims 1 to 13 and 27 to 40, which are all of the claims pending in this application.<sup>1</sup>

We AFFIRM.

<sup>1</sup> Claims 14 to 26 were canceled subsequent to the final rejection.

### BACKGROUND

The appellants' invention relates to the field of protective coverings, and, more particularly to a protective cover for lengths of material such as ropes, tethers, lanyards, etc. of the type that are likely to be subjected to continuous abrasion and/or exposure to undesirable environmental conditions or chemicals (specification, p. 1). A copy of the claims under appeal is set forth in the appendix to the appellants' brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Kite, III et al. (Kite)	4,891,256	Jan. 2, 1990
Holt et al. (Holt)	5,070,597	Dec. 10, 1991
Andrieu et al. (Andrieu)	5,300,337	Apr. 5, 1994
Holland et al. (Holland)	5,395,682	Mar. 7, 1995
Ratigan	5,441,790	Aug. 15, 1995

The rejections under appeal are as follows:<sup>2</sup>

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<sup>2</sup> In the final rejection (p. 3) claims 1 to 13 were provisionally rejected under 35 U.S.C. § 101 as claiming the same invention as that of claims 1 to 13 of copending Application No. 09/860,423. The appellants filed a Terminal Disclaimer on October 30, 2003 supposedly to obviate the provisional double patenting rejection based on pending Application Number 09/860,423. However, while a Terminal Disclaimer can obviate a provisional "obviousness type" double patenting rejection, a Terminal Disclaimer can not obviate a provisional "same invention type" double patenting rejection. The appellants have not contested this rejection in the brief. The examiner has not set forth this rejection in the answer. It is unclear to us as to the status of this rejection.

1. Claims 1 to 9 and 27 to 35 stand rejected under 35 U.S.C. § 103 as being unpatentable over Andrieu in view of Holland.
2. Claim 40 stands rejected under 35 U.S.C. § 103 as being unpatentable over Ratigan in view of Holland.
3. Claims 10 to 12 and 36 to 38 stand rejected under 35 U.S.C. § 103 as being unpatentable over Andrieu in view of Holland (herein referred to as modified Andrieu), as applied to claims 1 and 27 above, further in view of Kite.
4. Claims 13 and 39 stand rejected under 35 U.S.C. § 103 as being unpatentable over Andrieu in view of Holland, as applied to claims 1 and 27 above, further in view of Holt.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejections, we make reference to the final rejection and the answer (mailed February 24, 2004) for the examiner's complete reasoning in support of the rejections, and to the brief (filed July 2, 2003) for the appellants' arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art references, and to the

respective positions articulated by the appellants and the examiner. As a consequence of our review, we make the determinations which follow.

**Rejection 1**

We sustain the rejection of claims 1 to 9 and 27 to 35 under 35 U.S.C. § 103 as being unpatentable over Andrieu in view of Holland.

The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art. See In re Young, 927 F.2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991) and In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). Moreover, in evaluating such references it is proper to take into account not only the specific teachings of the references but also the inferences which one skilled in the art would reasonably be expected to draw therefrom. In re Preda, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

Claim 1 reads as follows:

A protective cover for lengths of material used in environments in which said lengths of material are subjected to abrasion, chemicals, or weather extremes, said protective cover comprising a sleeve surrounding said length of material, said sleeve having open ends and formed of a fabric made substantially of high performance yarns having a tensile modulus equal to or greater than 150 grams/denier and a tenacity equal to or greater than 7

grams/denier so that the protective cover is abrasion-resistant, cut-resistant, and tear-resistant.<sup>[3]</sup>

Andrieu's invention relates to wraparound fabric sleeves of interlaced fibrous materials, the sleeves being preferably formed by a weaving process. More particularly, Andrieu's invention relates to wraparound sleeves having a closure device and even more specifically to wraparound sleeves for the protection of elongated articles, such as cables wherein the sleeves are intended to provide protection from the effects of abrasion or heat as well as to maintain the elongated articles in a neatly bundled arrangement so that they are not damaged by moving machinery parts or the like.

Andrieu teaches (column 1, lines 48-61) that (1) a need exists for a simple and reliable, relatively low cost system, for closure of a sleeve which will accommodate variations in the diameter of a bundle of elongated articles, such as cables having

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<sup>3</sup> The appellants' specification (p. 2) teaches that the protective cover is constructed from a woven fabric formed primarily from high- strength (high performance) yarns. As used herein, "high-strength yarns" refers to the entire family of yarns that have a tensile modulus equal to or greater than 150 grams/denier and a tenacity equal to or greater than 7 grams/denier. Such high strength yarns may be formed from long chain polyethylene fibers (known as SPECTRA®), aramids such as KEVLAR® (Dupont), liquid crystal polymers such as VECTRAN® (Hoechst Celanese), or combinations thereof. The preferred yarn for the fabric is available from suppliers, such as Allied Signal, under the tradename SPECTRA®. Fabrics woven or knitted from selected one of these yarns have a high level of tear-resistance, abrasion-resistance, cut-and-stab resistance, ultraviolet radiation resistance, and resistance to chemicals and low temperatures. These characteristics improve both the strength and durability of the fabric. In addition, fabric so formed is only about one-third the weight of conventional fabrics like vinyl-coated nylons and polyesters.

connectors intermediate their length, while allowing for cable breakouts at points where a cable is required to be connected to a particular instrument or item of equipment; and (2) in accordance with the invention, a ribbon or web of sleeving material is provided, the sleeving material being comprised of monofilament warps and bulky multi-filament yarn as the fill material.

Figures 1 and 2 of Andrieu illustrate a woven fabric sleeve material of the kind incorporating the features of his invention. The sleeve material is comprised of monofilament warps 10 which are formed of polyester or other suitable material which are preferably of the family of materials commonly referred to as engineered plastics. Materials in the family of engineered plastics of the type referred to by Andrieu include plastics that have a tensile modulus of greater than 50,000 psi and in the range of from about 50,000 to about 200,000.

Holland's invention is directed to flexible curtains for covering cargo containers, luggage trailers, and truck openings, and more particularly, to a fabric curtain cover that has minimal weight, but increased abrasion resistance, tear-strength, cut-and-stab resistance, and is compatible with the environment for which it is intended. In the BACKGROUND OF THE INVENTION section, Holland discusses the disadvantages of

the standard cargo cover constructed from canvas or from vinyl coated nylon or polyester. Then, in the SUMMARY OF THE INVENTION section, Holland teaches that:

The present invention is directed to an improved fabric and fabric cargo cover fabricated from yarns formed of long chain expanded polyethylene fibers. One source of such fibers is sold by Allied Signal under the trademark "Spectra". These fibers are sometimes referred to as "ultra high molecular weight polyethylene" within the scope of U.S. Pat. No. 4,413,110. The specification and teachings of this patent are incorporated by reference. Such a fabric has a high level of tear-resistance, abrasion resistance, cut-and-stab resistance, and chemical and cold resistance to improve the strength and durability of the fabric. In addition, such fabric is about one-third the weight of such conventional fabrics as vinyl coated nylon. This results in fuel savings of about \$30 per year for each pound of fabric used.

Holland teaches (column 3, lines 16-24) that:

The improved fabric is intended to be used as a fabric to cover cargo containers, luggage trailers, and truck openings. While the improved fabric can be used for a variety of purposes, the ensuing description is directed to a fabric cover for a cargo container.

Accordingly, it is an object of the present invention to provide a durable, lightweight fabric that has improved tear-strength, cut-and-stab resistance, abrasion resistance, cold resistance, and chemical resistance.

Holland further teaches (column 6, lines 3-9) that:

The present invention has been described as utilized on a cargo cover 10 for a cargo container 12. The fabric 30 used for cargo cover 10 may also be used for luggage trailer curtains and truck closure curtains generally covered by fabric and other uses where a lightweight, tear-resistant, abrasion resistant, stab-and-cut resistant, chemical resistant, and cold resistant fabric is required.

In the rejection of claim 1, the examiner ascertained (answer, p. 7) that Andrieu does not disclose the protective cover being made from high performance yarns having a tensile modulus equal to or greater than 150 grams/denier and a tenacity equal to or greater than 7 grams/denier, wherein the yarns are cut and tear resistant. The examiner then determined (answer, pp. 8-9) that it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the protective cover of Andrieu (which is made of polyester fibers) to comprise Spectra® fibers and the fabric parameters of the protective fabric as taught by Holland because Holland teaches that such a fabric by made of commercially available Spectra® fibers and having the specified parameters, overcomes the disadvantages of polyester fabric covers, has minimal weight, increased abrasion resistance, tear strength, cut and stab resistance, and is compatible with the environment in which the cover is used.

The appellants argue that claim 1 is not suggested by the teachings of Andrieu and Holland for the following reasons. First, Andrieu's cover is not formed from a high performance yarn. Second, Holland is directed to a cargo curtain, not a protective sleeve, and as such is non-analogous. Third, there is no motivation, absent the use of impermissible hindsight, for a person having ordinary skill in the art to have combined the teachings of Andrieu and Holland so as to arrive at the claimed invention. Lastly,

the appellants urge that Andrieu's invention is directed to a low cost fabric which teaches away from the invention which utilizes a costly high performance yarn.

In our view, the combined teachings of Andrieu and Holland would have made it obvious at the time the invention was made to a person having ordinary skill in the art to have modified the protective cover of Andrieu so as to utilize Spectra® fibers as set forth in the rejection under appeal. We find the appellants' arguments unpersuasive for the following reasons.

First, while Andrieu's cover is not formed from a high performance yarn<sup>4</sup>, the teachings of Holland are sufficient to have made it obvious at the time the invention was made to a person having ordinary skill in the art to have modified the protective cover of Andrieu so as to utilize Spectra® fibers. In this regard, we note the rejection is under 35 U.S.C. § 103 not 35 U.S.C. § 102.

Second, while Holland is directed to a cargo curtain, not a protective sleeve, Holland is analogous art. The test for non-analogous art is first whether the art is within the field of the inventor's endeavor and, if not, whether it is reasonably pertinent to the

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<sup>4</sup> The appellants' specification (p. 2) teaches that a high- strength (high performance) yarn has a tensile modulus equal to or greater than 150 grams/denier and a tenacity equal to or greater than 7 grams/denier.

problem with which the inventor was involved. In re Wood, 599 F.2d 1032, 1036, 202 USPQ 171, 174 (CCPA 1979). A reference is reasonably pertinent if, even though it may be in a different field of endeavor, it logically would have commended itself to an inventor's attention in considering his problem because of the matter with which it deals. In re Clay, 966 F.2d 656, 659, 23 USPQ2d 1058, 1061 (Fed. Cir. 1992). In the present instance, we are informed by the appellants' originally filed specification (p. 2) that the present invention is directed to a simple, yet effective, abrasion-resistant protective system for lengths of material such as hoses, cables, ropes, etc. of the type used in high abrasion applications. Holland teaches that his fabric has a high level of tear-resistance, abrasion resistance, cut-and-stab resistance, and chemical and cold resistance to improve the strength and durability of the fabric and thus falls at least into the latter category of the Wood test, and logically would have commended itself to an artisan's attention in considering the appellants' problem. Thus, we conclude that Holland is analogous art.

Third, there is motivation, without the use of impermissible hindsight<sup>5</sup>, for a person having ordinary skill in the art to have combined the teachings of Andrieu and

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<sup>5</sup> The use of hindsight knowledge derived from the appellants' own disclosure to support an obviousness rejection under 35 U.S.C. § 103 is impermissible. See, for example, W. L. Gore and Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

Holland so as to arrive at the claimed invention. Holland's clear teaching that a fabric made of commercially available Spectra® fibers has minimal weight, increased abrasion resistance, tear strength, and cut and stab resistance which overcomes the disadvantages of polyester fabric covers provides, in our opinion, sufficient motivation for an artisan to have modified Andrieu's protective cover by using Spectra® fibers, thus arriving at the claimed invention. Additionally, we note that Holland also teaches that his improved fabric can be used for uses other than as a cargo cover where a lightweight, tear-resistant, abrasion resistant, stab-and-cut resistant, chemical resistant, and cold resistant fabric is required.

Lastly, Andrieu's invention does not teach away from the claimed invention. As to the specific question of "teaching away," our reviewing court in In re Gurley, 27 F.3d 551, 553, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994) stated "a reference will teach away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant." In this case, Andrieu does not teach or suggest that high performance yarns would not work in a protective sleeve. Instead, Andrieu teaches that the woven fabric sleeve material is comprised of monofilament warps which are formed of polyester or other suitable material from the family of materials commonly referred to as engineered plastics. As such, it is our

view that Andrieu suggests utilizing engineered plastics to form the woven fabric sleeve. Holland clearly teaches the benefits of a fabric which utilizes an engineered plastic high performance yarn (i.e., Spectra® fibers).

For the reasons set forth above, the decision of the examiner to reject claim 1 under 35 U.S.C. § 103 is affirmed.

The decision of the examiner to reject claims 2 to 9 and 27 to 35 under 35 U.S.C. § 103 is also affirmed since the appellants have not argued separately the patentability of any particular claim apart from the others, thus allowing claims 2 to 9 and 27 to 35 to fall with claim 1 (see In re Young, 927 F.2d 588, 590, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991); and In re Wood, 582 F.2d 638, 642, 199 USPQ 137, 140 (CCPA 1978)).

## **Rejection 2**

We sustain the rejection of claim 40 under 35 U.S.C. § 103 as being unpatentable over Ratigan in view of Holland.

Claim 40 reads as follows:

An abrasion-resistant rope that must be periodically moved or pulled across abrasive services comprising an outer protective layer formed substantially from high performance yarns having a tensile modulus equal to or greater than 150 grams/denier and a tenacity equal to or greater than 7 grams/denier so that the protective layer is abrasion-resistant, cut-resistant, and tear-resistant.

Ratigan's invention relates to the protection of synthetic rope from abrasion, more specifically chafe abrasion of synthetic marine mooring and anchor rope.

Ratigan's chafe protection device consists of a piece of textile material made of synthetic fiber, like nylon, or polypropylene, or polyester, or acrylic. Referring to Figures 1-3, the chafe protection device comprises a section of material, consisting of synthetic fiber material on one side 1 and latex mat backing on the reverse side 2. Permanently attached to the longitudinal borders of the latex mat surface material 2 are continuous strips of VELCRO® hooks 3 and 4. To cover a rope with the protective device, either of the longitudinal strips, 3 or 4, are placed on and in longitudinal alignment with the rope

5. The protective material is then wrapped tightly by hand around the rope. A completed wrap is shown in Figure 4. Unraveling of the protective device from the rope is prevented by the remaining longitudinal strip of VELCRO® hooks, 3 or 4 which bind with the fiber material 1 of the protective device.

In the rejection of claim 40, the examiner ascertained (answer, pp. 9-10) that Ratigan does not disclose the protective cover being made from high performance yarns having a tensile modulus equal to or greater than 150 grams/denier and a tenacity equal to or greater than 7 grams/denier, wherein the yarns are cut resistant. The examiner then determined (answer, p. 10) that it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the protective cover of Ratigan (which is made of polyester fibers) to comprise Spectra® fibers and the fabric parameters of the protective fabric as taught by Holland because Holland teaches that such a fabric by made of commercially available Spectra® fibers and having the specified parameters, overcomes the disadvantages of polyester fabric covers, has minimal weight, increased abrasion resistance, tear strength, cut and stab resistance, and is compatible with the environment in which the cover is used.

The appellants argue that claim 40 is not suggested by the teachings of Ratigan and Holland for the following reasons. First, Ratigan's protective cover is not formed from a high performance yarn. Second, Holland is directed to a cargo curtain, not a protective sleeve, and as such is non-analogous. Third, there is no motivation, absent the use of impermissible hindsight, for a person having ordinary skill in the art to have combined the teachings of Ratigan and Holland so as to arrive at the claimed invention.

In our view, the combined teachings of Ratigan and Holland would have made it obvious at the time the invention was made to a person having ordinary skill in the art to have modified the protective cover of Ratigan so as to utilize Spectra® fibers as set forth in the rejection under appeal. We find the appellants' arguments unpersuasive for the following reasons.

First, while Ratigan's cover is not formed from a high performance yarn, the teachings of Holland are sufficient to have made it obvious at the time the invention was made to a person having ordinary skill in the art to have modified the protective cover of Ratigan so as to utilize Spectra® fibers. In this regard, we note the rejection is under 35 U.S.C. § 103 not 35 U.S.C. § 102.

Second, Holland is analogous art for the reasons set forth above.

Lastly, there is motivation, without the use of impermissible hindsight, for a person having ordinary skill in the art to have combined the teachings of Ratigan and Holland so as to arrive at the claimed invention. Holland's clear teaching that a fabric made of commercially available Spectra® fibers has minimal weight, increased abrasion resistance, tear strength, and cut and stab resistance which overcomes the disadvantages of polyester fabric covers provides, in our opinion, sufficient motivation

for an artisan to have modified Ratigan's protective cover by using Spectra® fibers, thus arriving at the claimed invention. Additionally, we note that Holland also teaches that his improved fabric can be used for uses other than as a cargo cover where a lightweight, tear-resistant, abrasion resistant, stab-and-cut resistant, chemical resistant, and cold resistant fabric is required.

For the reasons set forth above, the decision of the examiner to reject claim 40 under 35 U.S.C. § 103 is affirmed.

### **Rejection 3**

We sustain the rejection of claims 10 to 12 and 36 to 38 under 35 U.S.C. § 103 as being unpatentable over Andrieu in view of Holland and Kite.

In this rejection, the examiner proposes to combine the closure device of Andrieu as modified by Holland, and the plurality of axially compressible and radially expandible devices of Kite (see Figure 3). The appellants argue (brief, p. 10) that:

As argued above, Andrieu et al. cannot be properly modified by Holland et al. Further, the Examiner again provides no explanation how or why one of ordinary skill would be motivated to modify Andrieu et al., and there is no teaching, suggestion, or motivation in Andrieu et al. for such a modification.

The appellants' argument is unpersuasive. First, there is ample motivation to modify Andrieu based on the teachings of Holland as set forth previously. Second, both Andrieu and Kite provide sufficient motivation to have made it obvious at the time the invention was made to a person having ordinary skill in the art to form the protective cover as a plurality of bands to provide cable breakouts as shown in Figure 3 of Kite.

For the reasons set forth above, the decision of the examiner to reject claims 10 to 12 and 36 to 38 under 35 U.S.C. § 103 is affirmed.

#### **Rejection 4**

We sustain the rejection of claims 13 and 39 under 35 U.S.C. § 103 as being unpatentable over Andrieu in view of Holland and Holt.

In this rejection, the examiner proposes to combine the closure device of Andrieu as modified by Holland, and the tubular rubber member of Holt to obtain a protective cover with a fabric hood fastened to at least one end. The appellants argue (brief, pp. 10-11) that there is no teaching, suggestion, or motivation in the applied prior art for such a modification.

The appellants' argument is unpersuasive. It is our opinion that Holt's teaching of end cap 19 (see Figure 6D) provides sufficient motivation to have made it obvious at the time the invention was made to a person having ordinary skill in the art to add an end cap to the closure device of Andrieu as modified by Holland so as to close off the end of a cable or hose.

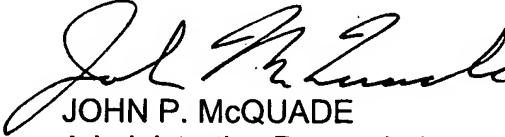
For the reasons set forth above, the decision of the examiner to reject claims 13 and 39 under 35 U.S.C. § 103 is affirmed.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1 to 13 and 27 to 40 under 35 U.S.C. § 103 is affirmed.

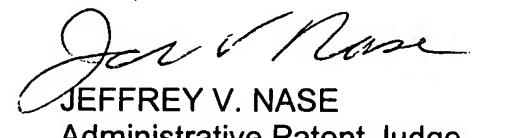
No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED



JOHN P. McQUADE  
Administrative Patent Judge

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